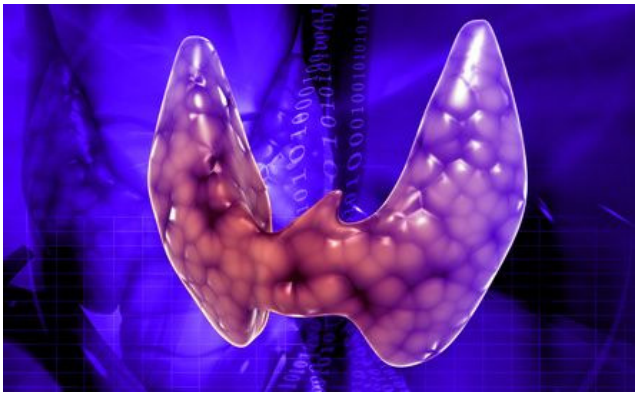
WHOLEHEALTHWEB.COM

THE BETTER HEALTH NEWS

SELENIUM AND THE THYROID

THYROID

An article reviewing the relationship between selenium and thyroid function appeared in *Endocrine Reviews* (1992;13(2):207-220). The thyroid gland produces T4, or thyroxine, which is converted to the more active form of the hormone, T3. Rats fed a selenium-deficient diet over a period of four to six weeks had high levels of T4 and low levels of T3. The difference between the two levels of hormone increased as time progressed on the selenium-deficient diet. This indicates that selenium is necessary to convert thyroxine to a more active form.



Thyroid stimulating hormone (TSH) is produced by the pituitary gland to get the thyroid gland to produce its hormones. TSH levels become elevated in hypothyroidism. TSH levels doubled on the selenium deficient diet. Pituitary growth hormone decreased as well.

Cretinism is due to hypothyroidism in the newborn. One of the implications is mental retardation. When children diagnosed with cretinism are supplemented with selenium, T3 and T4 levels actually decrease ; iodine supplementation helps with this. The authors recommend supplementing with iodine before introducing selenium in this instance. The conversion of T4 to T3, is a problem often seen with primary thyroid hypofunction, thyroid hypofunction secondary to anterior pituitary hypofunction, with adrenal cortical hyperfunction and with increased estrogen levels (exogenous or endogenous).

HYPOTHYROIDISM IS OFTEN MISSED

The test commonly used to screen for hypothyroidism is TSH. Many cases of hypothyroidism are missed because screening for TSH is not always done and because TSH is an inadequate test for thyroid function. As many as 13 million Americans may have an undiagnosed thyroid problem, according to a study known as the Colorado Thyroid Disease Prevalence Study. The study was performed by Knoll Parmaceutical (makers of Synthroid). Over 25,000 participants were studied in 1995. The researchers found that nearly 9% of the participants who were not on thyroid medication were hypothyroid and a little over 1% were hyperthyroid. If this number were extrapolated to the entire US population, the number of patients with an undiagnosed thyroid problem would number 13 million. The study also found that even "subclinical" hypothyroidism may raise cholesterol levels.

Research appearing in *Wien Klin Wochenschr* (2006; 117(18): 636-40) looked at 85 hypothyroid patients, 114 normal subjects and the implications of merely using TSH to evaluate their thyroid status. Researchers found that T3 and sex hormone-binding globulin (SHBG) were lower in subjects with hypothyroidism compared to subjects with normal thyroid function. Treating the hypothyroid subjects with T4 gave them TSH levels on a par with the subjects who had normal thyroid function. Although the TSH level was normal, they tended to have lower T3 (which is the more active form of thyroid hormone) levels. The authors concluded that measuring TSH may not be the best way to monitor hypothyroid patients.

The British Medical Journal [BMJ 2000;320:1332-1334 (13 May)] published research examining the flaws in diagnosing hypothyroidism. The authors concluded that there are indeed flaws with the way that we diagnose hypothyroidism. First of all, the research is lacking that shows us the relative importance of lab tests and symptomatology in diagnosing the thyroid. TSH production is affected by the level of thyroid hormone, but it is also affected by other things. We don't fully understand how various illnesses affect TSH and the thyroid hormones. There is also a need to consider the possibilities of false positive and false negative results when looking at lab tests related to the thyroid.

WholeHealthWeb.com

Whole Health Web is a site designed to teach people about the value of natural health care. Our goal is to inform you and to help you to start a conversation with your doctor about natural health care. Most of our articles are about scientific research. We will also provide opinion pieces provided by natural health practitioners. Visit us often, as we are continually adding new content

There are a lot of patients exhibiting the symptoms of hypothyroidism, but are told that their TSH is normal and that there is no problem with the thyroid. Symptoms of hypothyroidism include: fatigue (and lack of motivation), feeling cold when others do not, dry skin, constipation, depression, difficulty losing weight, brittle hair and nails that break easily, poor memory, muscle cramps, sadness or crying for no reason, high cholesterol, and frequent colds. (The patient does not necessarily have all of the symptoms).

In most medical offices, a TSH value of 6 is considered normal. The reality is that many people with a TSH higher than 3 (or even 2) exhibit many symptoms of hypothyroidism. The symptoms are the key. The lab results help, but are not a perfect way to diagnose.

IODINE AND THE THYROID

Iodine is necessary to produce thyroid hormone. A review article appearing in the *Lancet* (March 28,1998;351:923-924) pointed out that 1.5 billion people are at risk for brain damage due to a lack of iodine. An article in the *Journal of Clinical Endocrinology and Metabolism* (1993;77(3):587-591) summarized the health problems brought on by iodine deficiency. These include cretinism, goiter, intellectual disability, growth retardation, neonatal hypothyroidism, increased miscarriage, increased perinatal mortality and increased infant mortality (too much iodine can create hyperthyroidism). There may be a connection between low birth weight and iodine deficiency, according to research appearing in *Pediatrics* (October, 1996;98(4):730-734). Research appearing in the *American Journal of Clinical Nutrition* (2009; 90 (5): 1264-71) looked at iodine status and its relationship to brain development. The subjects were 184 children (between the ages of 10 and 13) with mild iodine deficiency. In the randomized, placebo-controlled study, the subjects were given either 150 mcg of iodine or a placebo each day for a period of 28 weeks. Those given the iodine had improved iodine status and improvement on two of four cognitive tests. Research appearing in the *American Journal of Clinical Nutrition* (May, 1996;63(5):782-786) found a connection between low iodine levels in children and slow learning.

Iodine supplementation may be useful in the treatment of fibrocystic breast disease. The *Canadian Journal of Surgery* (October 1993;36:453-460) found that women supplemented with iodine had greater improvement in their symptoms when compared to controls. Earlier animal research appearing in the *Archives of Pathology and Laboratory Medicine* (November, 1979;103:631-634) looked at rats who were given sodium perchlorate. Sodium perchlorate blocks iodine, enabling researchers to mimic iodine deficiency in the rats--creating fiborcystic breast disease in the rats.

Iodine is an important nutrient. It is especially important to pregnant women and children. Iodine is classified chemically with the halogens--it is similar to fluorine, bromine and chlorine. These other halogens can displace iodine; so drinking water with fluorine and chlorine may increase the need for iodine. Bromine is used in preservatives, like borminated vegetable oil (BVO), and should be avoided. Iodine requirements are 150 mcg per day for adults and 200 mcg per day for pregnant and lactating women. Some physicians believe that these numbers are too low.

Signs that iodine is required can include: emotional changes during the change of seasons, where the skin cracks on the hands or feet, excess or thick secretions, sinus infections, ovarian dysfunction, benign cysts and fibroids, tenderness of the area around the costal cartilage's, topically for hemorrhoids, acne, boils and with some cases of rheumatoid arthritis.

HOW HEALTHY ARE YOU?

FINDING OUT IS EASY AS 1, 2, 3!

Right Now, You Can Take Advantage Of Our Free Online Health Assessment Tool.

JUST FOLLOW 1, 2, 3!

1. Visit our website to take the FREE online health assessment.
2. Print the results.
3. Bring your results to your natural health practitioner.

TAKE OUR FREE ONLINE HEALTH ASSESSMENT NOW!

Visit: www.WholeHealthWeb.com

And Take Your Free Health Assessment Now!

WholeHealthWEB
Learning to Feel Better...Naturally!

WholeHealthWeb.com

Visit often as we are continually adding new content

THYROID, BRAIN FUNCTION AND THE ENVIRONMENT

Research appearing in *The Lancet* (17 October 2016 http://dx.doi.org/10.1016/S2213-8587(16)30275-3) Looked at Endocrine-disrupting chemicals (EDCs) and their link to disease and the possible contribution to an increase in medical costs (>1% of the gross domestic product [GDP] in the European Union). Because EDC exposure varies between the United States and Europe, due to a difference in regulations. The authors used this difference to quantify disease burdens and costs related to EDC exposure.

EDC exposure in the USA contributes to disease and dysfunction, with annual costs taking up more than 2% of the GDP ($340 billion, or 2.33% of GDP). In Europe, the cost is lower ($217 billion, or 1.28% of the GDP) Differences from the European Union suggest the need for improved screening for chemical disruption to endocrine systems and proactive prevention.

An article in *Environmental Health Perspective* (June 2000;108(Suppl 3):433-438) reviewed the importance of the thyroid for brain function and the effect environmental chemicals have on both the thyroid and the nervous system. Proper thyroid function is especially important for brain development in the fetus and during the first two months after birth.

Animal studies have shown that exposure to PCBs and dioxins create abnormal neurologic function and impaired thyroid function. Chemical exposure can enlarge the thyroid, and decrease T4 levels. Many environmental toxins mimic thyroid hormones and bind to proteins used to transport thyroid hormone, competing with thyroid hormone and altering function.